

Clinical and morphological features of chlamydial pneumonia

Satibaldieva Nasiba Rajabovna

Associate Professor of the Department of
Children's Diseases of the Tashkent Medical Academy,

Babajanova Charos

4th year student of Treatment faculty
at Tashkent Medical Academy,
Tashkent, Uzbekistan
charosbabajanova1902@gmail.com

Abstract: This article defines chlamydial pneumonia, this disease, a subtype of atypical pneumonia, poses a significant health concern, particularly among pediatric populations. This retrospective study aims to investigate the clinical characteristics and treatment outcomes of chlamydial pneumonia in children aged 3 to 8 years. A total of 26 children with confirmed Chlamydia pneumoniae infection were examined, revealing notable respiratory and extrapulmonary manifestations. Clinical presentation varied, with symptoms ranging from rhinitis and tracheobronchitis to unproductive cough, fever, and chest pain. Broncho-obstructive syndrome was prevalent, accompanied by leukocytosis, eosinophilia, and accelerated erythrocyte sedimentation rate (ESR). Radiographic findings predominantly showed interstitial changes and increased vascular components. Macrolides emerged as the primary therapeutic agents, leading to clinical recovery within 10-14 days. These findings underscore the importance of early recognition and appropriate management of chlamydial pneumonia in pediatric patients.

Keywords: Chlamydial pneumonia, pediatric patients, clinical features, treatment outcomes, macrolides

Introduction

Chlamydial pneumonia is characterized by respiratory manifestations (rhinitis, tracheobronchitis), unproductive cough, low-grade and febrile temperature, extrapulmonary symptoms (arthralgia, myalgia). When making a diagnosis, auscultatory and radiological data are taken into account, but the decisive role belongs to laboratory diagnostics (ELISA, MIF, PCR, etc.). For the treatment of chlamydial pneumonia, antimicrobial agents (macrolides, tetracyclines, fluoroquinolones), immunomodulators, and physiotherapy are used.

Chlamydial pneumonia is an etiological type of atypical pneumonia that occurs when the respiratory tract is infected with various types of chlamydia - Ch. pneumoniae, Ch. psittaci and Ch. trachomatis. It is believed that annually among community-acquired pneumonia from 5 to 15% of cases are caused by chlamydia; during epidemic outbreaks this figure can be 25%. Most often, adults become ill; cases of chlamydial pneumonia in newborns are associated with infection from mothers with urogenital chlamydia.

Asymptomatic carriage of chlamydia in the nasopharynx is detected in more than half of adults and 5-7% of children, so the likelihood of transmission of infection through respiratory secretions is very high. Intrafamily outbreaks of chlamydial pneumonia, as well as cases of mass morbidity in isolated communities, have been described.

Chlamydia causes a wide extend of infections. As of late a coordinate association was found between the location of C.pneumoniae and the pathogenesis of atherosclerosis. Chlamydia cells were found in atheromatous plaques, the cytoplasm of macrophages, smooth muscle cells, and endothelial cells. On normal, chlamydia is found in atheromatous plaques in 70% of cases! A few creators relate chlamydial contamination with the start, worsening, and improvement of asthma. Within the immunopathogenetic viewpoint, it is exceptionally imperative that agents of the class Chlamydia are able of tainting monocytes and macrophages and duplicating in them. Chlamydia that have entered fringe blood mononuclear cells are practical and metabolically dynamic. In expansion, chlamydia can infect endothelial cells, which suggests it can harm blood vessels in any tissues of the body, and this, in turn, can lead to the development of numerous, and changing, immunological targets, which regularly shows itself as a sign of an immune system infection. Tentatively

appeared the plausibility of chlamydia contamination not as it were of epithelial cells, but too of connective tissue cells, in particular human skin fibroblasts and articular cartilage chondrocytes, and so affirmed the capacity of this microorganism to create in cartilage tissue.

The interaction of chlamydia with the host cell is multifaceted: the reproductive cycle of development, destruction by phagosomes, L-transformation, long-term persistence, the ability to reverse into normal forms of the reproductive cycle. These interaction features predetermine the variety of options for the clinical course of the infectious process - acute, chronic, recurrent, inapparent, latent.

All of the above confirms the ability of chlamydial infection to affect many organs and tissues. It is worth dwelling on some manifestations of such a lesion, which, given the widespread distribution of the pathogen, has recently increasingly attracted the attention of clinicians.

The aim of the study: to study the features of the clinical course of pneumonia in children against the background of chlamydial infection.

Material and methods. 26 children were examined. Antibodies to Chlamidium pneumonia were detected by enzyme immunoassay in 14 children, 8 girls, 6 boys, aged from 3 to 8 years. An increase in antibodies was observed more than 4 times. From the anamnesis, all children suffered from pneumonia 2-3 times. Children were admitted to the hospital at different stages of the disease: 7% of patients were on the first days of illness, 93% on days 5-7 from the onset of the disease. The condition was moderate in 30%, severe in 70%.

Results and discussion. In 15% of cases, chlamydial pneumonia in its acute course is manifested by a predominance of respiratory symptoms such as (rhinitis, tracheobronchitis), nasal congestion, deepening of the voice, and in the subacute course, 85% of patients show signs of an unproductive cough, subfibril and fibrile temperature, dry and wet paroxysmal cough, chest pain (for 15-18 days). 24.8% of patients had a dry, painful cough and malaise. In 75.2% of cases, broncho-obstructive syndrome was expressed; clinically, pneumonia in this group was characterized by pronounced manifestations of intoxication and the severity of the local lesion. X-ray examination revealed focal changes in 12.2% of cases, segmental changes in 14.4%, and increased vascular component and interstitial changes in 84%. Changes in the peripheral blood were detected in the form of leukocytosis with neutrophilia, eosinophilia, thrombocytopenia, anemia and accelerated ESR.

The drugs of choice for the treatment of atypical pneumonia against the background of chlamydial pneumonia were macrolides (new macrolides, clarithromycin, roxithromycin). Against the background of intensive therapy, clinical recovery occurred by 10-14 days from the onset of the disease.

Conclusions:

1. Chlamydial pneumonia pneumonia against the background of chlamydial pneumonia was characterized by a gradual onset of the disease in 58% of cases, severe intoxication, a prolonged dry painful cough, scanty physical manifestations in 42-79% of cases and extrapulmonary symptoms in 1/3 of patients.

2. The hemogram of children with community-acquired pneumonia against the background of chlamydial pneumonia revealed significant changes in the form of leukocytosis with neutrophilia, eosinophilia, thrombocytopenia and accelerated ESR.

3. On the radiograph, 84% show interstitial changes and an increase in the vascular component.

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